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HISTORICAL GUIDEPOSTS FOR A REVOLUTION IN MILITARY AFFAIRS

by

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The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

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Abstract of

**HISTORICAL GUIDEPOSTS FOR A REVOLUTION IN MILITARY AFFAIRS**

The United States Armed Forces are in a period conducive to a Revolution in Military Affairs (RMA) and have developed operational concepts for implementing this RMA. However, all services are constrained in this implementation by limited resources. A historical look, from the operational level of war, at previous attempts to realize a RMA provides relevant "lessons learned" for contemporary military leaders. An analysis of the French inter-World War and Soviet Cold War RMA experiences provides several important insights to U.S. decisionmakers.

First is the need to develop an overall operational concept that can be fully implemented with the resources available. French resources did not support implementation of their operational concept and led to defeat in 1940. The Soviets fully resourced their concept and it became an operational catalyst for the U.S.. Second is the need to educate military leaders at all levels to master innovative concepts and technologies. French close-mindedness in technological adaptation contrasts with the Soviet's effective manipulation of technology and force structure to maximize the possibilities of their concept. Third, is the importance of developing a command and control system that supports the operational concept. The French system did not support their concept and was a major factor in their 1940 defeat. The Soviets recognized the inadequacies of their system and made the necessary changes to support their concept. These historical "lessons learned" can serve U.S. military leadership as decisionmaking guideposts in avoiding the mistakes of the past while realizing the benefits of a Revolution in Military Affairs.

*"It was the best of times, it was the worst of times..."*

-The opening of Charles Dickens A Tale Of Two Cities

These words from Charles Dickens fictional account of Pre-Napoleonic Revolutionary France aptly describe the environment in which another revolution is taking place, the US military Revolution in Military Affairs or RMA. The definition of a Revolution in Military Affairs is generally considered to be a combination of new technologies, innovative operational concepts and organizational adaptation which fundamentally changes the character and conduct of military conflict and renders existing methods of warfare obsolete.<sup>1</sup>

The "Best of Times" describes the potential of the technological and doctrinal explosion taking place in industry and the armed services, while the "Worst of Times" describes the constraint of dramatically decreased resources available for research, development and modernization of both doctrine and equipment.

Beginning shortly after the breakup of the Soviet Union in 1989, and accelerated by the Persian Gulf War, the various services of the United States armed forces began exploring operational and organizational changes which, if implemented, would meet the definition of an RMA. These proposed changes are intended to meet the challenges of an evolving threat and rapidly changing technical environment. Each service's proposal will take advantage of technical advances in: information technology, space platforms, precision guided munitions and increased conventional weapon lethality. At the same time, each proposal recognizes the increasing complexity of threats to US interests resulting from a rise in regional instability brought about by: economic competition, rising nationalism, ethnic and religious disputes,

proliferation of weapons of mass destruction, and the collapse of the Cold War balance of power between the Soviet Union and the West.

These developments are occurring at the same time the United States is experiencing a revenue deficit that is increasingly constraining the resources available to the armed forces. This has placed the US military into a situation requiring critical decisions on future concepts and equipment to maintain an effective force in a changing world.

We cannot look into the future for help in making these critical decisions, but we can look into the past to see how other societies and nations have faced similar dilemmas. History provides many examples of societies in which the conditions for an RMA existed along with decisions made, their outcomes and impact on that nation's armed forces. The focus of this look into the past is at the operational level. This is the level of war, the planning and execution of engagements and their coordination in order to further the object of the war<sup>2</sup>, that is used by Clausewitz to describe the character of the conduct of war and it is a failure at this level of war which contemporary historians cite as a major factor in the U.S. defeat in Vietnam. Given the importance of operational war, a focus on trends that increase or decrease the effectiveness of this aspect of conflict would be useful to US military decisionmakers in their attempts to implement an effective RMA. France between the two World Wars and the Soviet Union at the height of the Cold War are 20th century examples of powerful, industrialized nations existing during periods conducive to a RMA. Each of these will be examined at the operational level to identify trends applicable today.

*Churchill asked point-blank, "When and where are you going to counterattack the flank of the bulge? From the North or from the South?" His reply was, "Inferiority of numbers, inferiority of equipment, inferiority of method"-and then a hopeless shrug of the shoulders. There was no argument. Here was the admission of the bankruptcy of a whole generation of French military thought and preparation.*<sup>3</sup> - Churchill to the French Commander-in-Chief, GEN Gamelin during the French collapse

In 1919 the French Army was the largest and most successful in Europe and generally viewed as the finest in the world.<sup>4</sup> Her continental rivals were in total disarray. The defeated Imperial Germany was in ruins, its boundaries redrawn and military dismantled. Russia was in the continuing throes of the communist revolution and engaged in bitter civil war. A little more than ten years later, in 1930, the French possessed the world's second largest army and air force, only Russia's was bigger.<sup>5</sup> Technologically there had been significant breakthroughs in wireless communications, aviation and track laying/mechanized technologies. In 1939 the French fielded one of the worlds finest tanks and the defensive system along her western borders, the Maginot Line, was an engineering marvel.<sup>6</sup> The French government provided considerable resources to the French military. In 1930 the French outspent a resurgent Germany in defense expenditures by four to one and continued to outspend Germany until 1934.<sup>7</sup> Yet in 1940, Germany stunned the world by defeating the French military machine in 43 days.<sup>8</sup> When the events of May and June 1940 are analyzed, several factors involving technological adaptation, organizational structure and operational concepts which led to operational failure and strategic defeat become apparent.

The German's main thrust went through Belgium with a supporting attack through the Ardennes. Although the French Army had been forward deployed, it was not prepared to counter the speed with which the Germans were able to execute<sup>9</sup>, nor were French commanders prepared to counter the close air support provided by the Luftwaffe in lieu of artillery support.<sup>10</sup> Despite early identification of German avenues of approach, the French Commander-in-Chief, GEN Gamelin, held back commitment of limited mobile armored reserves for several days. When these reserves were finally released to the operational commanders of the 9th and 2d Armies who were fighting the battle, they were committed hesitantly and fought piecemeal. By the time GEN Gamelin finally realized the magnitude of the German attack and French difficulties, the Germans had effected two major penetrations and were heading for the English Channel.<sup>11</sup> In hindsight it seems improbable that could have happened. However, the conditions leading to French defeat had been gestating for two decades.

The French were the victors of WWI. However, this victory came at a steep price. The most industrially and agriculturally productive areas of France, the northern provinces, were in ruins. Six million men of fighting age were dead, wounded or missing. The government was deep in debt.<sup>12</sup> Additionally, truce expectations designed to guarantee French borders and permanently weaken any German attempts to threaten France had not been met by the international community.<sup>13</sup> French leadership determined to ensure the security of her borders, treaty or not. The government directed the military to develop a scheme to accomplish this task. The single most important condition of any scheme was the requirement for guaranteed inviolability of French territory. Under no circumstances must

French soil be ceded to an invader. The military's response to this tasking came in 1927 with the adoption of the "continuous front" operational concept.<sup>14</sup> This concept reflected the French experience in WWI, in particular, the 1916 defense of Verdun in which German offensives had been broken and channelized by French forts and destroyed by massed firepower and the commitment of reserves. This concept would involve massive new defensive construction connecting existing renovated French and Belgium border forts. The result would be a modern defensive barrier system stretching from the North Sea to the Swiss border popularly known as the Maginot Line.<sup>15</sup> In the event the mere thought of attempting to penetrate this defensive system did not deter an attacker, an actual attack would be broken on the defenses by massive concentrated firepower supported by "interval troops". The "interval troops", consisting of infantry and artillery, were positioned in depth to deal with any opponent managing to get through the static defenses.<sup>16</sup> This concept had the additional benefit of providing the most protection for the smallest expenditure of manpower, a critical factor given the WWI manpower losses and the low French birthrate.<sup>17</sup> Given the French strategic imperative of territorial integrity against future German incursions, this was not an unreasonable operational concept. Unfortunately, the government did not have the resources necessary to complete the envisioned defenses, nor did the military attempt to adjust the concept as technology and the threat evolved.

The costs of the defensive line greatly exceeded estimates and consumed the French military budget through the mid-1930s at the expense of other modernization programs. Despite this level of effort, the physical construction of the Maginot Line remained incomplete and construction nearly stopped in the mid-30's with the onset of the world-wide depression



in France.<sup>18</sup> This came just as the scope of the project increased with the 1936 Belgian declaration of neutrality, opening up a huge gap in the North previously covered by the Belgian army. Between the Belgian defection and the incomplete construction of the Maginot Line, the size of the operational reserves, in the already manpower strapped army, necessary for the success of the concept now exceeded expectations.<sup>19</sup>

The implementation of the “continuous front” concept and repair of WWI damages had consumed both the budget and military manpower of the French Republic. There were insufficient funds to modernize the force outside the scope of the defensive system. Although prototype development did occur, fiscal resources were unavailable to take advantage of technological advances and replace the aging WWI equipment stockpiles with sufficient quantities of modern tools of war.<sup>20</sup> These fiscal deficiencies were compounded by the intellectual deficiencies of the French military

The French military began WWII with doctrine applicable to the command problems of WWI.<sup>21</sup> The French military could not get past the WWI experience. Instruction in the French war college, published French doctrine and professional French military journals manifested this rigidity of thought throughout the 20’s and 30’s. Studies of WWI battles and campaigns dominated the curriculum while operational concepts emerging from the Spanish Civil War, the Sino-Japanese War of 1937, German experimentation and the Russian Civil War were ignored or selectively studied through the WWI experience.<sup>22</sup> Time and space considerations brought about by mechanization, the impact of consolidated armor, the integration of air and ground forces, the need for rapid decision making and decentralized execution on a newly fluid battlefield were foreign to the accepted French view of future

conflict. This thinking was so ingrained that even the warnings of the French liaison officer to Poland, who witnessed the 1939 Blitzkrieg and provided a detailed analysis to the French high command, were dismissed with an "it cannot happen here" attitude.<sup>23</sup>

The absence of innovative thinking extended to technical adaptation and integration. French military leadership was satisfied with accepted, WWI proven, concepts of technical adaptation.<sup>24</sup> Throughout the inter-war years, with little guidance from the military high command, French industry remained unfocused on military needs. This led to late development and selection as well as incomplete operational integration of tanks, airplanes and "wireless" communications.<sup>25</sup>

The French Air Force was viewed as somewhat of a nuisance in the effective application of firepower since artillerymen perceived simultaneous aerial bombing as something that upset the observation of forward observers.<sup>26</sup> Ineffectual efforts in the development of aviation tactical employment and provision of sufficient modern airframes ceded this third dimension of the battlefield to the Germans. The effectiveness of the Luftwaffe took the French completely by surprise.<sup>27</sup>

The highly centralized, WWI based, command and control demanded by French doctrine depended upon reliable communications. The telephone and courier, similar to WWI, became the backbone of the operational level command and control system. Fielding of "wireless" communications equipment was rudimentary. There was not even a radio communications center in the headquarters of the French Commander-in-Chief.<sup>28</sup> When the telephone lines were cut, French operational commanders lost the ability to orchestrate the fight.<sup>29</sup>

A lack of operational command and staff training and coordination compounded the problems of the obsolete communications system. In peacetime, the French military was broken down into administrative areas and the largest standing French formation was the division. Upon mobilization, the commanders and staffs of these administrative areas became the operational level corps commanders and staffs. Outside of the annual Fall maneuvers, there was little chance for familiarization with warfighting duties.<sup>30</sup> The French military did not train as they intended to fight. The absence of operational level training could be overcome only if war was to be similar in nature to that of WWI. A war fought at the pace of WWI, characterized by highly centralized control and a very set-piece, stable battlefield did not require extensive rehearsal. This reflected the doctrinal and technical rigidity of French military leadership. The emerging fast-paced mechanized battlefield where time and space were critical factors measured in hours and miles and not weeks and meters could not be envisioned and those who attempted to do so, such as DeGaulle, were heavily criticized and virtually ignored.<sup>31</sup>

The French choice of an inadequately resourced operational concept and an inability to get past the WWI experience led to an operational breakdown. The military leadership was unable to provide an operational design and supporting force structure to take advantage of the rapidly changing technical and threat environment of their day. The potential to revolutionize the French way of war was never realized and the cost was the loss of France.

*In the wake of Vietnam, the US Army returned to its traditional focus on Europe. During the previous decade, the Warsaw Pact had added impressive qualitative improvements to its already crushing numerical preponderance-David Jablonsky, Parameters, " U.S. Military Doctrine and the Revolution in Military Affairs "*<sup>32</sup>

As the United States was pulling out of Vietnam, the Soviet Union was putting the finishing touches upon what they described as a "Revolution in Military Affairs". The transformations that took place within the Soviet armed forces during the 60's and 70's, particularly at the operational level, provide valuable insights for structuring ideas and organizations to take advantage of technology.

The Soviet military had put considerable thought into the synchronization of tactical actions to achieve strategic goals. The experience of the eastern front in WWI in which the German Imperial Army destroyed the armies of the Czar in great encircling battles and the experiences of Red Army cavalry formations in outmaneuvering their Czarist opponents developed an appreciation for operations in depth. The development of operational fronts executing the great encircling battles, which characterized fighting on the eastern front in WWII, reinforced this appreciation. From these experiences, the concept of the "Deep Offensive Operation" evolved. This concept, involving rapid tactical penetrations and deep operational exploitation, became the cornerstone of Soviet military thought.<sup>33</sup>

Soviet military scientists describe the advent of nuclear weapons as the fifth evolution of warfare.<sup>34</sup> Their military institutions recognized that nuclear technology, when combined with advances in jet equipment and radioelectronics, would fundamentally change patterns of waging war. The adaptation of the operational concept of the "Deep Offensive Operation" to this new environment became the focus of Soviet military theorists.<sup>35</sup>

Several aspects of executing "Deep Offensive Operations" under these new conditions became readily apparent. Advances in jet and rocket technology and the capability of placing

nuclear warheads on these means of delivery provided an ability to strike deeper, faster and with greater effect than ever before. Air and naval forces could now play a greater role in the creation of an operational impact for exploitation by ground forces.<sup>36</sup> Similarly, missile and rocket technology provided ground forces the means to project firepower to operational depths, while complete mechanization and fielding of radioelectronic communication equipment at all levels enabled them to maintain dispersion and retain the ability to rapidly mass tactical and logistical assets to exploit these deep operational fires. This recognition led to a fundamental reorganization of the Soviet Armed Forces to increase its effectiveness in the execution of the "Deep Offensive Operations" concept.<sup>37</sup>

The Soviet armed forces overhauled its structure and created a new branch, the Strategic Missile Force. Special Operations Forces were developed for projection into the operational depths of an opponent's formations to cause disruption of command and control systems, paving the way for deep strike assets of the Air Force and Strategic Missile Force.<sup>38</sup> Tactical units were redesigned to become compact, more maneuverable and easily controlled while logistical forces were completely motorized. This permitted both dispersion and rapid massing of these elements reducing their vulnerability to nuclear effects.<sup>39</sup> The study of cybernetics within the military intensified as the need for rapid, effective command and control throughout the force became apparent. The introduction of automated command and control systems and technical control devices into the force increased the speed of information collection and subsequent receipt and transmission of this information.<sup>40</sup>

These new capabilities exponentially increased the demands placed upon the operational commander in acquiring expertise and in training and employing the newly

structured forces. Soviet professional military education became a top priority. It focused on the development of technically and tactically proficient commanders and staffs who understood the "Deep Offensive Operations" concept and could effectively employ the new systems and forces. This education took place in the classroom as well as during practical exercises testing the execution of new concepts.<sup>41</sup> This statement sums up the Soviet view of the most effective commander's tool, "A good staff armed with an automated control system is the most advanced troop control body which can be imagined today".<sup>42</sup>

With a constant focus on the execution of "Deep Offensive Operations", the Soviet military combined a study of the past with a recognition of developing technological realities to reshape their military.<sup>43</sup> They took full advantage of technological developments occurring in the 60's and early 70's and focused their military and industrial energies on the development and fielding of a force capable of executing the "Deep Offensive Operations" concept. Professional development, technical acquisition, and organizational structuring all supported the development of an operational design to effectively execute "Deep Offensive Operations". The Soviets conducted a Revolution in Military Affairs.

The changes which took place in the military of the Soviet's most dangerous opponent, the United States, reflect an appreciation of the new capabilities provided by the Soviet RMA. This appreciation proved to be a catalyst for a generation of US military thought focused on the operational level of war eventually leading to the development of "Air-Land Battle"..

*Never before have armies been challenged to assimilate the combined weight of so much change so rapidly. In this environment, the payoff will go to organizations which are versatile, flexible, and strategically agile, and to leaders who are bold, creative, innovative, and inventive. Conversely, there is enormous risk in hesitation, undue precision, and a quest for certainty-*General Gordon R. Sullivan, former U.S. Army Chief of Staff<sup>44</sup>

*Numbers do count....*Basic Aerospace Doctrine of the United States Air Force<sup>45</sup>

Some ideas jump right out upon analysis of the French and Soviet RMA experiences. First is the need to identify an overall operational concept that can be fully implemented given the resources available. The French could not afford their "continuous front" and it failed. The Soviets were able to fully implement their concept of "Deep Offensive Operations" and it became an example for the United States.

Second, is the need to educate military leaders at all levels to master innovative concepts and technologies. The close mindedness of the French military leadership and doctrinal rigidity of their professional development produced commanders who did not appreciate the impact the revolution taking place in operational design was having on the battlefield. They were mentally unprepared to cope with the operational demands of May and June 1940. Soviet military leadership recognized the need for innovation and ensured their system of professional development kept pace with change. Commanders were educated and practiced in their role in making the operational concept work.

Third is the criticality of effective operational command and control. The French WWI based communications system did not provide an adequate means of initiating, sequencing or synchronizing their operational concept. Centralized control failed and operational commanders were uninformed and isolated throughout the battle. The Soviets

recognized the importance of command and control to the successful implementation of their operational concept and prioritized the development of a communications infrastructure which assisted the operational commander in maintaining battlefield awareness and directing operational formations.

Finally and perhaps most importantly is the recognition that technology and doctrine are mutually dependent. The resources spent by the French in acquiring things: technically superior fortresses, tanks, airplanes, those radios which were fielded, were wasted. They were not sufficient to support the operational concept. Neither the military educational system nor the peacetime exercise of the force focused on adapting technology to the effective execution of the operational concept. In contrast, the Soviet approach was a model of integration. Doctrine drove technological adaptation. Technology allowed the military to develop the scope and effectiveness of their operational concept to an unprecedented degree, the technical effort was rigorously resourced and focused.

The United States Armed forces are in a period ripe for a Revolution in Military Affairs. This RMA will take the services into a future which Russian military theorists call a sixth generation of warfare characterized by superior data-processing to support smart weaponry<sup>46</sup> and the Tofflers describe as "Third Wave" warfare characterized by manipulation of knowledge based systems.<sup>47</sup> The listed French and Soviet RMA "lessons learned" have direct application today and can serve as a rudimentary "RMA checklist" to avoid the mistakes of the past.

Each of the services has proposed concepts to take their force into the 21st century: Army-Force XXI, Navy-Forward....From the Sea, Air Force-Global Reach/Global Power and



Marines-Operational Maneuver....From the Sea. Each of these concepts requires organizational changes and material acquisition to make that idea work. However, there appears to be an absence of an overall operational concept which focuses the efforts of each of the services and ensures integration of organizations and equipment acquisition to produce the most effective force, a "System of systems" as it is described by Admiral Owens, the former Vice-Chairman of the Joint Chiefs of Staff.<sup>48</sup> This is particularly critical in this period of finite resources and rapid global changes.

Along with the development of an overarching force-wide operational concept must come professional development ensuring the availability of sufficient skilled personnel to execute the concept. One of the entries in the Operation UPHOLD DEMOCRACY Joint After-Action Report(JAAR) highlights this requirement, "Joint Planning is complex. It requires a core of highly qualified joint planners."<sup>49</sup> Service schools, staff colleges and war colleges must rigorously educate officers at the tactical and operational level to provide commanders with an agility of thought and execution supported by skilled staffs capable of rapid action as well as ensuring service integration and commonality of purpose. If the United States is to operate globally, this education must include integration with allies as well. Effective education must be focused and occur in the classroom as well as the field. Misunderstandings in execution in today's environment and future environments will have severe operational consequences.

Finally, and most important, is the development of command and control systems that effectively support the operational concept. Having the best personnel, equipment and plans are meaningless if you cannot talk to anyone or have a functioning system for command and

control.<sup>50</sup> Operational commanders and their staffs must be able to rapidly collect information, distribute intelligence and direct formations regardless of distance, environment or service. Without command and control there is chaos.

The last sentence of the definition of a Revolution in Military Affairs at the beginning of this paper is critical. The “other methods of warfare” rendered obsolete belong to those who failed to heed the lessons of history. History can provide important insights into the challenges and consequences of dealing with a Revolution in Military Affairs. These insights can serve U.S. military leadership as decisionmaking guideposts in maximizing the “Best of Times” aspects of a revolutionary environment while minimizing the “Worst of Times” aspects.

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